SPORT AND NATURAL HISTORY.[1]

(1) IN works of the present nature, Mr. Millais is at his best; and his best, alike with pen and with pencil, is, it is almost unnecessary to say, very good indeed. Caribou-hunting was the main object of his expedition, and in this work the author has given us an account of the local race of the reindeer which has never before been equalled, a feature of special value being a coloured plate of the animal from a sketch by himself. Some magnificent and perhaps unrivalled photographs of heads of this handsome animal are also reproduced.

Mr. Millais is never content with following in the beaten track; and during his expedition he succeeded in making his way into previously unknown tracts in the interior, where he succeeded, from a clue given by Mr. F. C. Selous, in locating a large non-migratory southern herd. It will probably come as a surprise to many of his readers that a large area of the interior of the country is still unknown, even to the Government surveyors. Here reindeer abound, these swampy tracts of the interior being, in fact, fit for nothing else than reindeer. A most satisfactory feature is that, despite an organised annual slaughter during migration, the caribou continue to increase in the island, and, in the author's opinion, are likely to do so for centuries.

Mr. Millais estimates the number of caribou in the island at 200,000. The rate of destruction is estimated as follows:—"Putting the death-rate at the highest estimate of three animals each to 4000 shooters, 12,000 would be killed out of 200,000, that is, a depreciation of 6 per cent. Now this is a much smaller rate of killing than takes place among the stags of Scotland, and they are undoubtedly on the increase."

The book is, however, by no means restricted to Newfoundland and caribou, for we have, near the middle, an interesting chapter on the author's experiences in whaling, in which the game were the blue finner and the humpback. In the course of this chapter we notice (pp. 162, 178) two different dates assigned to Svend Foyn's invention of the bomb-harpoon, the one last mentioned being correct; and at least one slip in proof-reading is observable.

The coloured plates of scenery and animals are exquisite, and ought by themselves to ensure a large sale for this charming volume; while the reproductions from photographs and pen sketches are no less admirable and interesting. As an example, we reproduce the illustration of a party of caribou swimming a lake, with Mount Cormack in the distance.

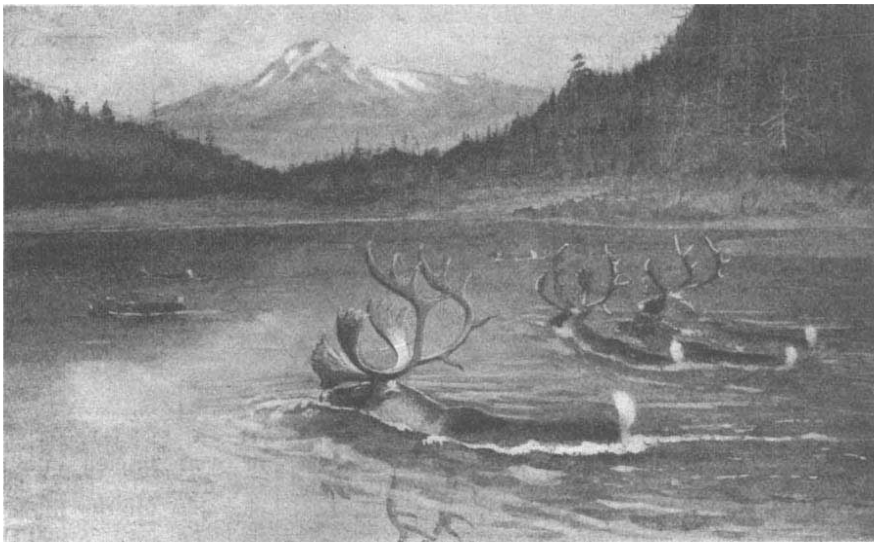

Fig. 1.—Caribou swimming a lake: Mount Cormack in the background. From "Newfoundland and its Untrodden Ways."

(2) In place of stirring jungle adventures and hair-breadth escapes from tigers and wild boars, we have in this attractive and beautifully illustrated volume a series of chapters on the insect and other invertebrate (we really want a word equivalent to the Spanish *becho,* which will serve for all these creatures) life of the plains of India, followed by others on Indian trees, plants, and gardening. From preface to index the work is written in a style and with a charm which cannot fail to interest a large circle of readers; while the numerous references to details connected with the habits and environment of the various species cited serve to proclaim the author (already well known to the reading public by an earlier work on the same lines) as an accurate and painstaking observer. So graphic, indeed, are his descriptions that we can almost imagine ourselves in the veranda of a bungalow on a hot night at the beginning of the rains, surrounded by pests of many sizes and sorts, or wandering in spring through the incomparably beautiful glades of the Botanical Gardens at Calcutta.

Among the larger pests to which the author pays much attention are centipedes and scorpions; and in connection with the latter he relates how a *yogi* from Mirzapur, who had the reputation of being immune to the scorpion's sting, submitted himself to a trial in Calcutta. To make sure that there should be no "bogus" in the matter, a good supply of freshly-caught scorpions of the most venomous type was provided. After some hesitation, he allowed several of the creatures to affix themselves to his fingers, when he appeared to suffer no special inconvenience or pain, and thus demonstrated the truth of his assertions. The immunity was, in Col. Cunningham's opinion, probably due to frequent inoculation with the venom, aided possibly by an innate tendency in that direction, and the consequent development of an antitoxin, the case being, in fact, analogous to that comparative immunity to mosquito-poison which results in most persons after lengthened preliminary suffering.

Among other trials to which the resident in India is subjected, the author waxes eloquent on the difficulty of preserving books from the ravages of "silver-fish" and white ants; while he also refers to the voracity of the huge land-snails (achatinas) introduced into Cal-

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[1] (1) "Newfoundland and its Untrodden Ways." By J. G. Millais. Pp. xvi+340; illustrated. (London: Longmans, Green, and Co., 1907.) Price 21*s.* net.

(2) "Plagues and Pleasures of Life in Bengal." By Lieut.-Colonel D. D. Cunningham. Pp. xi+385; illustrated. (London: John Murray, 1907.) Price 12*s.* net.

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cutta gardens from Mauritius, and the unpleasant results which ensue if their destruction is not conducted on special lines.

Let no one, however, imagine that an Indian life has not its lighter side. What, for instance, can equal the glory of its sunsets, so graphically described by the author, or the luxuriance and beauty of its gardens, which he brings to our notice with the aid of both camera and pen? As an example of what can be done in the way of effect with foliage alone, we reproduce the accompanying illustration, with which we must, reluctantly, take leave of a charming, thoughtful, and instructive work. R. L.

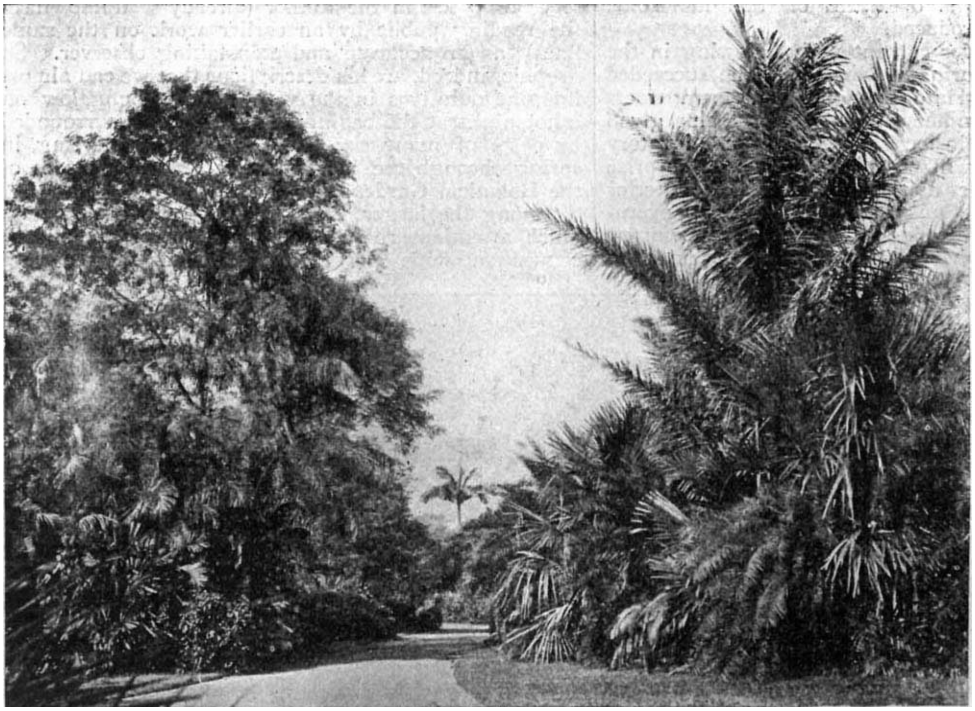

FIG. 2.—Palms in an Indian Garden. From "Plagues and Pleasures of Life in Bengal."

"KIMBERLITE" AND THE SOURCE OF THE DIAMOND IN SOUTH AFRICA.

THE origin of the volcanic pipes of South Africa and the genesis of the diamonds contained in their "blue-ground" filling are as productive of controversy as that other geological puzzle—the source of the gold in the Witwatersrand conglomerates—the discussion of which was revived by Prof. J W. Gregory at a recent meeting of the Institute of Mining and Metallurgy; and agreement among the disputants is as little likely to be arrived at in the one case as in the other. Quite a crop of papers on the diamond-pipes has recently appeared,[1] and a perusal of these reveals so remarkable a variation of opinion that it may perhaps serve a useful purpose to give in these columns a brief summary of the different views as to the nature of the original matrix of the diamond and the place in which it was produced, that have been put forward from time to time since the discovery of the "dry diggings" at Kimberley in 1870.

Prof. E. Cohen, who visited the diamond field in 1872, gave the first scientific explanation of the origin of the volcanic pipes in a letter addressed to Prof. Leonhard, and published in the "Neues Jahrbuch für Mineralogie" (1872, p. 859). According to Cohen the diamond occurrences represent the centres of tuff-eruptions, whereby the greater part of the erupted material was provided by older crystalline rocks underlying the present known formations. These furnished not only the diamonds, but probably most of the accompanying minerals. Forced violently upward by volcanic explosions, the shattered rocks became pulverised, and the diamonds either survived as complete crystals or were broken into fragments (the "splints" of the dealers). This view explains the fragmentary character of the minerals that accompany the diamond; it also accounts for the presence of so many fragments of crystalline rocks in the pipe-material ("blue-ground"), and for the strongly brecciated character of the latter. Cohen's view was subsequently somewhat modified by Chaper (Bull. Soc. Minér. de France, ii., 1879, p. 195), who found it necessary to assume a repetition of explosive eruptions in order to account for the variation in one and the same pipe of large masses of the blue ground in colour, mineral composition, richness in diamonds, &c.

On the other hand, Dunn, who wrote in 1874 (Quart. Journ. Geol. Soc., xxx., p. 54), described the blue ground as a "decomposed gabbro or euphotide"; while Maskelyne and Flight, who gave the first description of the microscopic character of the diamantiferous rock (Quart. Journ. Geol. Soc., xxx., 1874, p. 406), considered that it "was probably the original home of the diamond, possibly at the places of its contact with carbonaceous shales." These ideas were further developed by Carvill Lewis in papers read before the British Association in 1886 and 1887, and subsequently published by Prof. T. G. Bonney under the title "Papers and Notes on the Genesis and Matrix of the Diamond." After an elaborate microscopic investigation made in Prof. Rosenbusch's laboratory in Heidelberg, Lewis pronounced the rock to be a true eruptive lava—"a porphyritic

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[1] A. W. Rogers and A. L. du Toit: The Sutherland Volcanic Pipes and their Relationship to other Vents in S. Africa (Trans. S.A. Phil. Soc., vol xv., p. 61, 1904).

H. S. Harger: The Diamond Pipes and Fissures of South Africa (Trans. Geol. Soc. S.A., vol. viii., p. 110, 1905).

G. S. Corstorphine: The Occurrence in Kimberlite of Garnet-pyroxene Nodules carrying Diamonds (Trans. Geol. Soc. S.A., vol. x., p. 65, 1907).

F. W. Voit: Kimberlite Dykes and Pipes (Trans. Geol. Soc. S.A., vol. x., p. 69, 1907).

F. W Voit: The Origin of Diamonds (Trans. Geol. Soc., S.A., vol. x., p. 75, 1907).

A. L. du Toit: Geological Survey of the Eastern Portion of Griqualand West (Eleventh Ann. Rep. Geol. Com. Cape of Good Hope, p. 135, 1906).

A. Macco: Ueber die südafrikanischen Diamantlagerstätten (Zeitsch. der deutsch. geol. Gesellsch., vol. lix., p. 76, 1907).

R. Beck: Untersuchungen über einige südafrikanische Diamantenlagerstätten (Zeitsch. der deutsch. geol. Gesellsch., p. 276, 1907).

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